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EXAMINER

MCCARTNEY, LINZY T

ART UNIT	PAPER NUMBER
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2671

DATE MAILED: 04/08/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/754,361	Applicant(s) OHTSUKA ET AL.	
	Examiner Linzy McCartney	Art Unit 2671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/23/04 has been entered.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,313,816 to Kojima et al. (Kojima) in view of U.S. Patent No. 6,583,791 to Berryman et al. (Berryman).

a. Referring to claim 1, Kojima discloses a light emitting portion for emitting a display light (Fig. 3); a memory portion for storing a chromaticity conversion parameter obtained on the basis of each of display characteristics information from said plurality of display units (column 3, lines 12-25); a chromaticity converter portion receiving image data and said chromaticity conversion parameter, for converting chromaticity of said image data on the basis of said chromaticity conversion parameter (column 2, lines 62-65; column 3, lines 40-

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44). Kojima does not explicitly disclose a memory portion for storing display characteristics information of said light emitting portion for each of said plurality of display units or said display characteristics information is continuously stored in said memory portion even after said chromaticity conversion parameter is obtained. Berryman discloses a memory portion for storing display characteristics information of said light emitting portion for each of said plurality of display units (column 3, lines 29-37) and said display characteristics information is continuously stored in said memory portion even after said chromaticity conversion parameter is obtained (column 6, line 61 – column 7, line 12 Note that the display characteristics information is not overwritten after being used). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Kojima by including a memory portion for storing display characteristics information of said light emitting portion for each of said plurality of display units and display characteristics information is continuously stored in said memory portion even after said chromaticity conversion parameter is obtained as taught by Berryman. The suggestion/motivation for doing so would have been because it would facilitate display modules having variable intensity and hue to be assembled into arrays with relatively consistent intensity and color rendition (Berryman, column 2, lines 12-15) and because the system could store the display characteristics for future use.

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3. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima in view of Berryman as applied to claim 1 above further in view of U.S. Patent No. 6,243,059 to Greene et al. (Greene).

a. Referring to claim 2, Kojima discloses an operation portion receiving chromaticity range information (column 8, lines 27-37) on a predetermined chromaticity range common to said plurality of display units constituting said display portion (column 6, lines 18-21 and 56-66; Fig. 4) for obtaining said chromaticity conversion parameter on the basis of said chromaticity range information and said display characteristic information (column 8, lines 39-47; column 3, lines 12-18) Kojima does not explicitly disclose the operation portion receives display characteristics information. Greene discloses the operation portion receives display characteristics information (column 13, lines 12-16). At the time the invention was made, it would have been obvious to one of ordinary skill to further modify the apparatus of Kojima by having the operation portion receive display characteristics information as taught by Greene. The suggestion/motivation for doing so would have been because it would allow the computation of the color gamut (Greene, column 13, lines 14-16).

b. Referring to claim 3, Kojima discloses light emitting portion is divided into a plurality of blocks (column 2, lines 50-60; Fig. 1); information includes information on each of said plurality of blocks (column 3, lines 12-19); said chromaticity converter portion converts chromaticity of said image data for each of said plurality of blocks on the basis of said chromaticity conversion parameter for each of said plurality of blocks (column 3, lines 12-18).

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c. Referring to claim 4, Kojima discloses an operation portion receiving chromaticity range information on a predetermined chromaticity range (column 8, lines 27-37) including a chromaticity range common to said plurality of display units constituting said display portion (column 6, lines 18-21 and 56-66; Fig. 4) for obtaining said chromaticity conversion parameter for each of said plurality of blocks on the basis of said chromaticity range information and said display characteristics information on each of said plurality of blocks (column 3, lines 12-18; column 7, lines 38-41). Kojima does not explicitly disclose the operation portion receives display characteristics information on each of said blocks.

Greene discloses the operation portion receives display characteristics information on each of said blocks (column 13, lines 7-16). At the time the invention was made, it would have been obvious to one of ordinary skill to modify the apparatus of Kojima by having the operation portion receive display characteristics information on each of said blocks as taught by Greene. The suggestion/motivation for doing so would have been because it would allow the computation of the color gamut (Greene, column 13, lines 14-16).

4. Claims 6-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima in view of Greene further in view of U.S. Patent No. 6,219,011 to Aloni et al. (Aloni).

a. Referring to claim 6, Kojima discloses each of said plurality of display units having a light emitting portion for emitting a display light (Fig. 1; column 2, lines 50-60). Kojima also discloses providing a correcting circuit for each block (column 7, lines 38-41). Kojima does not explicitly disclose each of said plurality

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of display units storing information including display characteristics information of said light emitting portion; said display control device being provided outside said plurality of display units interactively communicably therewith; receiving said display characteristics information from each of said plurality of display units and said display control device comprising a chromaticity determination portion for determining a predetermined chromaticity range including a chromaticity range common to said plurality of display units on the basis of all said display characteristics information (column 6, lines 18-21 and 56-66; Fig. 4). Greene discloses receiving said display characteristics information from each of said plurality of display units and storing information including display characteristics information of said light emitting portion for a color correction circuit (column 13, lines 12-16) and said display control device comprising a chromaticity determination portion for determining a predetermined chromaticity range including a chromaticity range common to said plurality of display units on the basis of all said display characteristics information (column 11, line 16 – column 12, line 5 and column 13, line 1-24). Aloni discloses said display control device being provided outside said plurality of display units interactively communicably therewith (Fig. 2). At the time the invention was made, it would have been obvious to one of ordinary skill to modify the apparatus of Kojima by receiving said display characteristics information from each of said plurality of display units and storing information including display characteristics information of said light emitting portion for a color correction circuit and display control device being provided outside said plurality of display units and interactively communicably

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therewith and determining a predetermined chromaticity range including a chromaticity range common to said plurality of display units on the basis of all said display characteristics information as taught by Greene and Aloni. The suggestion/motivation for doing so would have been because it would allow the computation of the color gamut (Greene, column 13, lines 14-16) and because it would allow one device to control all the modular units (Aloni, column 8, lines 39-43).

b. Referring to claim 7, Kojima discloses an operation portion receiving chromaticity range information on said predetermined chromaticity range (column 8, lines 27-37) Kojima does not explicitly disclose the operation portion receives display characteristics information on each of said blocks and obtaining a chromaticity conversion parameter for each of said plurality of display units on the basis of said chromaticity range information and said display characteristics information (column 3, lines 12-18; column 7, lines 38-41).. Greene discloses the operation portion receives display characteristics information on each of said blocks (column 13, lines 7-16) and obtaining a chromaticity conversion parameter for each of said plurality of display units on the basis of said chromaticity range information and said display characteristics information (column 11, line 16 – column 12, line 5 and column 13, line 1-24). At the time the invention was made, it would have been obvious to one of ordinary skill to modify the teachings of Kojima with the teachings of Greene. The suggestion/motivation for doing so would have been because it would allow the computation of the color gamut (Greene, column 13, lines 14-16).

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c. Referring to claim 8, Kojima discloses light emitting portion is divided into a plurality of blocks (column 2, lines 50-60; Fig. 1); information includes information on each of said plurality of blocks (column 3, lines 12-19) Kojima does not explicitly disclose said chromaticity converter portion determines a chromaticity range including a chromaticity range common to all said plurality of blocks of said plurality of display units as said predetermined chromaticity range on the basis of said display characteristics information of all said plurality of blocks. Greene discloses said chromaticity converter portion determines a chromaticity range including a chromaticity range common to all said plurality of blocks of said plurality of display units as said predetermined chromaticity range on the basis of said display characteristics information of all said plurality of blocks (column 11, line 16 – column 12, line 5 and column 13, line 1-24).

d. Referring to claim 9, Kojima discloses an operation portion receiving chromaticity range information on said predetermined chromaticity range (column 8, lines 27-37) for obtaining said chromaticity conversion parameter for each of said plurality of blocks on the basis of said chromaticity range information and said display characteristics information on each of said plurality of blocks (column 3, lines 12-18; column 7, lines 38-41). Kojima does not explicitly disclose the operation portion receives display characteristics information on each of said blocks. Greene discloses the operation portion receives display characteristics information on each of said blocks (column 13, lines 7-16). At the time the invention was made, it would have been obvious to one of ordinary skill to modify the teachings of Kojima with the teachings of Greene. The

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suggestion/motivation for doing so would have been because it would allow the computation of the color gamut (Greene, column 13, lines 14-16).

e. Referring to claim 10, Kojima discloses a display portion constituted of a plurality of display units which are arranged (column 2, lines 50-60); and an operation portion (Fig. 3), wherein each of said plurality of display units comprises: a light emitting portion for emitting a display light (Fig. 3); and said operation portion receives chromaticity range information on said predetermined chromaticity range for obtaining said chromaticity conversion parameter for each of said plurality of display units on the basis of said chromaticity range information and said display characteristics information (column 6, lines 18-21 and 56-66; Fig. 4; column 8, lines 27-37). Kojima does not explicitly disclose that each of the plurality of display units comprises a memory portion for storing information including display characteristics information of said light emitting portion and a chromaticity conversion parameter obtained on the basis of said display characteristics information or a chromaticity converter portion receiving image data and said chromaticity conversion parameter, for converting chromaticity of said image data on the basis of said chromaticity conversion parameter; nor does Kojima disclose receiving said display characteristics information from each of said plurality of display units or a display control device provided outside said plurality of display units interactively communicably therewith and for controlling display of said plurality of display units said display control device comprises: a chromaticity range determination portion, for determining a predetermined chromaticity range including a chromaticity range

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common to said plurality of display units on the basis of all said display characteristics information. Greene discloses receiving display characteristics information from each of said plurality of display units (column 13, lines 7-16) and memory portion for storing information including display characteristics information of said light emitting portion (column 13, lines 7-16) and a chromaticity conversion parameter obtained on the basis of said display characteristics information (column 13, lines 16-24) and a chromaticity converter portion receiving image data and said chromaticity conversion parameter, for converting chromaticity of said image data on the basis of said chromaticity conversion parameter (Fig. 6) and said display control device comprises: a chromaticity range determination portion, for determining a predetermined chromaticity range including a chromaticity range common to said plurality of display units on the basis of all said display characteristics information (column 11, line 16 – column 12, line 5 and column 13, line 1-24),. Aloni discloses said display control device being provided outside said plurality of display units interactively communicably therewith (Fig. 2). At the time the invention was made, it would have been obvious to one of ordinary skill to modify the teachings of Kojima with the teachings of Greene and Aloni. The suggestion/motivation for doing so would have been because it would allow the design and manufacture of monolithic and tiled displays of superior uniformity (Greene, column 4, lines 39-44) and because it would allow one device to control all the modular units (Aloni, column 8, lines 39-43).

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f. Referring to claim 11, Kojima discloses said operation portion is inside said display control device (Fig. 3). Kojima does not explicitly disclose the display control device transmits said chromaticity conversion parameter obtained in said operation portion to corresponding one of said plurality of display units. Greene discloses transmitting said chromaticity conversion parameter obtained in the operation portion to corresponding one said plurality of display units (Fig. 7; column 12, 31-42; column 13, lines 12-16). At the time the invention was made, it would have been obvious to one of ordinary skill to modify the teachings of Kojima with the teachings of Greene. The suggestion/motivation for doing so would have been because it would allow the design and manufacture of monolithic and tiled displays of superior uniformity (Greene, column 4, lines 39-44).

g. Referring to claim 12, Kojima discloses said light emitting portion of each of said plurality of display units is divided into a plurality of blocks (column 2, lines 50-60); said information includes information on each of said plurality of blocks (column 3, lines 12-19); said chromaticity converter portion of each of said plurality of display units converts chromaticity of said image data of each of said blocks on the basis of said chromaticity conversion parameter for each of said plurality of blocks (column 3, lines 12-18); said operation portion provided inside said display control device (Fig. 3) receives chromaticity range information on said predetermined chromaticity range for obtaining said chromaticity conversion parameter for each of said plurality of blocks on the basis of said chromaticity range information and said display characteristics information on each of said

plurality of blocks (column 6, lines 18-21 and 56-66; Fig. 4; column 8, lines 27-37). Kojima does not explicitly disclose receiving display characteristics information on each of said plurality of blocks. Greene discloses receiving display characteristics information on each of said plurality of blocks (column 13, lines 7-16) and said chromaticity range determination portion of said display control device determines a chromaticity range including a chromaticity range common to said plurality of blocks of said plurality of display units as said predetermined chromaticity range on the basis of said display characteristics information of all the plurality of blocks (column 11, line 16 – column 12, line 5 and column 13, line 1-24);. At the time the invention was made, it would have been obvious to one of ordinary skill to modify the teachings of Kojima with the teachings of Greene. The suggestion/motivation for doing so would have been because it would allow the design and manufacture of monolithic and tiled displays of superior uniformity (Greene, column 4, lines 39-44).

h. Referring to claim 13, Kojima does not explicitly disclose a plurality of operation portions, each of said plurality of operation portions is provided inside each of said plurality of display units or said display control device transmits said chromaticity range information to said each of said plurality of display units. Greene discloses a plurality of operation portions, each of said plurality of operation portions is provided inside each of said plurality of display units (Fig. 7) and said display control device transmits said chromaticity range information to said each of said plurality of display units (Fig. 7; column 12, 31-42; column 13, lines 12-16). At the time the invention was made, it would have been obvious to

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one of ordinary skill to modify the teachings of Kojima with the teachings of Greene. The suggestion/motivation for doing so would have been because it would allow the design and manufacture of monolithic and tiled displays of superior uniformity (Greene, column 4, lines 39-44).

i. Referring to claim 14, Kojima discloses said light emitting portion of each of said plurality of display units is divided into a plurality of blocks (column 2, lines 50-60); said information includes information on each of said plurality of blocks (column 3, lines 12-19); said chromaticity converter portion of each of said plurality of display units converts chromaticity of said image data of each of said blocks on the basis of said chromaticity conversion parameter for each of said plurality of blocks (column 3, lines 12-18); said operation portion provided inside said display control device (Fig. 3) receives chromaticity range information on said predetermined chromaticity range for obtaining said chromaticity conversion parameter for each of said plurality of blocks on the basis of said chromaticity range information and said display characteristics information on each of said plurality of blocks (column 6, lines 18-21 and 56-66; Fig. 4; column 8, lines 27-37). Kojima does not explicitly disclose receiving display characteristics information on each of said plurality of blocks and said chromaticity range determination portion of said display control device determines a chromaticity range including a chromaticity range common to said plurality of blocks of said plurality of display units as said predetermined chromaticity range on the basis of said display characteristics information of all the plurality of blocks;. Greene discloses receiving display characteristics information on each of said plurality of

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blocks (column 13, lines 7-16) and said chromaticity range determination portion of said display control device determines a chromaticity range including a chromaticity range common to said plurality of blocks of said plurality of display units as said predetermined chromaticity range on the basis of said display characteristics information of all the plurality of blocks (column 11, line 16 – column 12, line 5 and column 13, line 1-24);. At the time the invention was made, it would have been obvious to one of ordinary skill to modify the teachings of Kojima with the teachings of Greene. The suggestion/motivation for doing so would have been because it would allow the design and manufacture of monolithic and tiled displays of superior uniformity (Greene, column 4, lines 39-44).

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima in view of Berryman as applied to claim 1 above further in view of U.S. Patent No. 6,493,008 to Yui.

a. Referring to claim 5, the modified apparatus of Kojima as applied above meets the limitations recited in claim 5 except a received-signal processing portion receiving a mixed signal in which a plurality of signals including said image data are mixed, for separating said mixed signal into said plurality of signals. Yui discloses the aforementioned limitation (column 6, lines 43-54). At the time the invention was made, it would have been obvious to one of ordinary skill to further modify the teachings of Kojima with the teachings of Yui. The suggestion/motivation for doing so would have been because it would allow the

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simultaneous display of image data inputted from a plurality of image sources on a display unit (Yui, column 1, lines 8-11).

Response to Arguments

6. Applicant's arguments filed 1/23/04 have been fully considered but they are not persuasive. Applicant argues that Kojima fails to disclose obtaining a chromaticity conversion parameter on the basis of each of display characteristics information from said plurality of display units. However, Kojima clearly discloses obtaining a chromaticity conversion parameter on the basis of each of display characteristics information from said plurality of display units (column 3, lines 12-25). Regarding Applicant's contention that Kojima does not obtain a chromaticity conversion on the basis of stored display characteristics, note that Berryman is relied upon to disclose storing display characteristics of said light emitting portion for each of said display units (column 3, lines 29-37) and that Kojima determines the chromaticity conversion parameter on the basis of display characteristics (column 3, lines 12-25).

Conclusion

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

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advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Linzy McCartney** whose telephone number is (703) 605-0745. The examiner can normally be reached on Mon-Friday (8:00AM-5:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mark Zimmerman**, can be reached at (703) 305-9798.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231


or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

ltm
March 24, 2004


MARK ZIMMERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600